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INSTITUTE DEVELOPS ELECTRIC WELDING

/Numbers in parentheses refer to list of appended sources./

From 1946 through 1949 the number of automatic welding units in use in the USSR increased 12 times. The yearly increase in their production by shops of the Institute of Electric Welding is as follows: (in percent)

	1945	1946	1947	1948
Self-propelled and suspension-type welding heads	100	162	132	100
Welding tractors:	100	339	772	1050

Grouped according to industries, the increase in the use of automatic and other electric welding units in comparison with the 1947 figure is as follows: in the machine-building industry, 4.2 times greater; in the construction industry, 3.4 times; in heating and power enterprises, 10.2 times; and in shipbuilding, 5.8 times.(1)

Of the welding units developed by the Institute of Electric Welding the TS-17 tractor may best be called universal. It embodies all the good qualities of the specialized TS-11, TS-12, and TS-13 models, and can be adjusted to various kinds of welding by adding certain attachments. The outstanding feature of the TS-17 is its ability to weld a circular seam inside a pipe of only 1.2 meters' diameter. The tractor weighs only 50 kilograms -- about one-half the weight of other contemporary universal tractors.

The TS-21 is especially good at butt welding. It differs from other tractors in that it has two motors; one for moving the tractor along the weld, the other for feeding the electrode wire.

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Another welding machine developed by the Institute of Electric Welding is the so-called magnetic tractor, used for welding seams on vertical surfaces. Held to the metal by magnets, it is particularly useful in blast furnace and ship construction.

A fourth institute welder is used especially for building up worn surfaces. Its arc burns electrode wires, the welder being suspended over the work on a rail.(2)

In 1948, the institute developed the AN-348 flux. Made from sand, manganese ore, flourspar, and sometimes chalk, it can be smelted in electric or high-capacity flame furnaces. Prepared in either a pumicaceous or vitreous form, it is granulated in water or by means of an air stream. In less than 1½ years the Avtosteklo Plant produced over 2,000 tons of AN-348 flux.(1)

The Institute of Electric Welding has created a special section which is working with many plants to foster the introduction of automatic electric welding in industrial fields where it is not yet utilized.(2)

/See item on electric welding in /

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SOURCES

1. Vestnik Mashinostroyeniya, No 2, Feb 50

2. Vestnik Mashinostroyeniya, No 3, Mar 50

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